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Coated food product

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Coated food product

The present invention relates to a coated food product, in particular a coated food product having at least two layers, wherein the coated food product is selected from the group consisting of oven baked food products, deep fried crisps, extruded products, dry roasted nuts and general dry food products having a water content of less than 5 percent by weight, calculated on the total weight of said general dry food product, said general dry food product being made of materials selected from the group consisting of cereals, preferably wheat and corn, potato and rice. The present invention in particular relates to coated pretzels which are coated with at least two layers.

As is well known in the art, seasoning or flavoring of food products is hampered by several serious drawbacks. A first disadvantage is that the addition of seasonings or flavors to a food product in a food manufacturing process leads to the formation of dust of the seasonings or flavors which is a healthy risk factor for the employees. Additionally, the formation of dust can lead to cross contamination with other food products made in the same factory. Another major disadvantage is that added seasonings or flavors do poorly adhere to the food product with the result that the seasonings or flavors fall of the food during transport, packaging, storage and consumption of the food product. This leads to poorly flavored products at the time of consumption and to undesired loss of flavor ingredients.

The problem described above occurs in particular in the production of flavored pretzels. Pretzels contain about one percent by weight of moisture and are immersed in caustic soda (sodium hydroxyde) prior to the baking process to provide the desired color. However, this immersion step also provides a smooth surface to the pretzel with the result that flavors do not or hardly adhere to said surface. Although is has been attempted to produce flavored pretzels by introducing the flavors into the dough, due to the baking process the flavors decompose which renders an unacceptable and undesirable taste to the pretzel. Alternatively, after the baking process a slurry of fat and flavors can be applied to cooled pretzels. However, this has disadvantages as well since the consumer will end up with greasy hands and fingers while eating the pretzels. Moreover, in the common production process pretzels are baked in an oven at a temperature of about 90°C and any oil or fat when applied to hot pretzels is adsorbed by the pretzels in about thirty seconds with the result that the flavors do no longer

adhere to the surface of the pretzel. Hence, the application of slurries of oil or fat and flavors to either hot or cooled pretzels does also not produce acceptable flavored pretzels.

Several solutions are provided in the art for the technical problems described above. For example, US 4.161.545 discloses a process for a honey coated roasted nut wherein raw nuts are first coated with a mixture comprising about 50 to 80 percent by weight of honey and about 20 to 50 percent by weight of water, said mixture preferably containing about 40 to 70 percent by weight of soluble solids. Subsequently, the honey coated nuts are coated with a dry mixture containing about 84 to 92 percent by weight of sugar and about 8 to 16 percent by weight of starch and finally the nuts are roasted. If the solids content of the honey containing mixture is on the low side of the 40 to 70 percent by weight range of soluble solids, the honey containing mixture preferably also contains a binder such as maltodextrins, dextrins, natural or derived edible polymers, arabic gum, guar gum and cellulose derivatives. Consequently, according to the method disclosed in US 4.161.454 the first layer is applied as a liquid composition and the second layer as a dry composition.

US 4.769.248 discloses a process for the preparation of dry roasted nuts comprising applying a first (dry) layer of starch to raw nuts followed by the application of a gelatin solution. Subsequently, a dry coating of seasonings is applied and finally the nuts are roasted. Consequently, according to the method disclosed in US 4.769.248 the first layer is applied as a dry composition and the second layer as a liquid composition.

US 5.571.546 discloses a multiple coated food product wherein the first coating layer comprises two layers comprising amylose, amylopectin and a minor quantity of disaccharide in different ratios and a second coating layer comprising amylose and amylopectin in a ratio of not less than 1:0.8. Alternatively, the first coating layer may comprise non-pregelatinised waxy starch and optionally non-waxy starch and the second layer may comprise non-waxy starch. The coating layers are preferably applied as dry mixtures or aqueous solutions or suspensions of the layer components.

US 5.599.569 discloses a method for adhering a seasoning to a food product, said method comprising the steps of: coating the food product with a solution containing an amylase treated starch, adhering thereon at least one seasoning, flavorant, or colorant, and drying the resultant food product.

US 5.798.132 discloses a method for preparing a coated food product, wherein a coating composition comprising an oil-in-water emulsion, ungelatinised starch, and a seasoning is applied to the food product, where after the food product is subjected to a two stage drying process. The food product disclosed in US 5.798.132 has only one layer.

US 6.294.208 discloses a method for the production of highly seasoned chips, wherein a base chip is coated with an oleaginous composition comprising a seasoning followed by adhering a dry seasoning material. The oleaginous composition comprises an oil from an animal source, an oil from a vegetable source or a non-nutritive oil. Consequently, according to the method disclosed in US 6.294.208 the first layer is applied as a liquid composition and the second layer as a dry composition.

EP A 841.012 discloses a method for the preparation of a snack product, in particular a coated nut, wherein the nut is first coated with a paste layer of flour. This first layer may be applied by bringing the nuts in a rotating drum and by adding flour in powder form and simultaneously spraying water. The second layer is an adhesive layer and is applied by battering or gumming a mixture of water and adhesive. Subsequently, a layer of bread crumbs is applied and finally the nut is fried. Flavors, aromas and seasonings may be added during the application of the adherent layer or the bread crumb layer. Consequently, the flavors, aromas and seasonings are not present in the first layer.

WO 01/05256 discloses a method for coating a food product by dipping in, tumbling or spraying the food product with a coating composition comprising a suspension of particles in a carrier oil, wherein said particles have a particular particle size and a particular particle size distribution. The particles comprise essentially flavoring or seasoning components and optionally carriers or diluents. Hence, the food product according to WO 01/05256 has only one layer.

The methods according to the prior art are still insufficient with respect to seasoning or flavor adherence.

The present invention therefore relates to a method for preparing a coated food product comprising:

(a) coating the food product in a first step with a layer of a liquid mixture comprising a seasoning and an oil or fat;

(b) coating the coated food product obtained in step (a) in a second step with a layer of a liquid mixture comprising a binder and water, and

(c) drying the coated food product obtained in step (b).

Advantages of the present invention are less dust formation in food factories, less fall off and hence a lower loss of flavors and seasonings during storage, transport, packaging and consumption of the food product. Additionally, the method is suitable for flavoring or seasoning food products which so far could not or hardly not be seasoned or flavored, in particular pretzels.

Optionally, the coated food product obtained in step (a) may first be dried before it is subjected to step (b).

According to the present invention, the food product is preferably selected from the group consisting of oven baked food products, deep fried crisps, extruded products, dry roasted nuts and general dry food products having a water content of less than 5 percent by weight, calculated on the total weight of said general dry food product, said general dry food product being made of materials selected from the group consisting of cereals, preferably wheat and corn, potato and rice. The oven baked food product is preferably selected from the group consisting of biscuits, cookies, pretzels, crackers, and snacks, and is in particular pretzels. The extruded products are preferably deep fried after extrusion.

The oil or fat is preferably selected from the group consisting of edible and vegetable oils. Examples of such oils are olive oil, palm oil, coconut oil, corn oil, line seed oil, peanut oil, rape seed oil, sesame oil, soy been oil, sunflower oil and mixtures thereof.

The seasoning is preferably a sweet seasoning or a savory seasoning, the latter optionally having a sour like lemon taste. The seasoning has preferably an average diameter of about 0.1 to 2.0 mm, more preferably 0.2 to 1.5 mm. The seasoning is well visible on the final coated food product.

According to the invention, the binder is preferably selected from the group consisting of maltodextrins, dextrins, edible polymers, arabic gum, guar gum and cellulose derivatives. The binder is in particular a maltodextrin, preferably a maltodextrin having a dextrin equivalent in the range of 0.1 to 10 which implies that it preferably contains a low amount of reducing sugars.

The edible polymers are preferably selected from the group consisting of proteins, starches and polysaccharides.

According to the present invention, the liquid mixture comprising a seasoning and an oil or fat comprises preferably 5,0 to 60,0 percent by weight of seasoning, more preferably 15,0 to 50,0 percent by weight and in particular 25,0 to 45,0 percent by weight, and 40,0 to 95,0 percent by weight of the oil or fat, more preferably 50,0 to 85,0 percent by weight and in particular 55,0 to 75,0 percent by weight, based on the total weight of the mixture. The liquid mixture comprising a binder and water comprises preferably 5,0 to 60,0 percent by weight of binder, more preferably 10,0 to 55,0 percent by weight and in particular 20,0 to 40,0 percent by weight, and 40,0 to 95,0 percent by weight of water, more preferably 45,0 to 90,0 percent by weight and in particular 60,0 to 80,0 percent by weight, based on the total weight of the mixture. Preferably, the liquid mixture comprising the binder and water contains powder sugar, wherein the ratio binder to powder sugar is preferably between 5:1 to 1:2, more preferably between 3:1 to 1:1 and in particular between 2:1 and 1:1.

The weight ratio of the liquid comprising the seasoning and the oil or fat and the liquid mixture comprising the binder and water is preferably 10:1 to 1:2, more preferably 8:1 to 1:1 and in particular 6:1 to 2:1.

In the last step according to the method of the present invention, the food product is dried in step (c) to a moisture content of preferably not more than about 7 % by weight, more preferably not more than about 5 % by weight and in particular not more than about 3 % by weight.

The present invention also relates to a coated food product obtainable by the method described above. In particular, the seasoning adhered to the final coated food product is well visible and the food product has an attractive appearance for the consumer.

Example 1

A slurry is prepared by adding 45 g of powder flavor at 50°C with 80 g to a spray fat (Durkex LC 200; obtainable from Loders Croklaan). The dispersion is stored at 50°C.

A coating composition is prepared by dissolving at 65°C 60 g of maltodextrin MD 10 and 40 g of icing sugar in 100 g of water. The composition is maintained at the same temperature in a holding tank.

A food product (400 g; moisture content of 1.5%) is transported at a temperature of 90°C via a belt to a tumbler. In the tumbler 125 g of the dispersion is sprayed on the food product during 30 s, while keeping the the temperature at 90°C Subsequently, 30 g of the coating composition is added to the same tumbler and is sprayed on the coated food product within 30 s. Finally, the coated food product is dried in the tumbler for about 5 minutes.

Example 2

The food product according to Example 1 was after drying further dried in a second tumbler until a moisture content of 1%.

Claims

1. A method for preparing a coated food product comprising:
   (a) coating the food product in a first step with a layer of a liquid mixture comprising a seasoning and an oil or fat;
   (b) coating the coated food product obtained in step (a) in a second step with a layer of a liquid mixture comprising a binder and water, and
   (c) drying the coated food product obtained in step (b).
2. The method according to claim 1, wherein the coated food product obtained in step (a) is dried.
3. The method according to claim 1 or claim 2, wherein the food product is selected from the group consisting of oven baked food products, deep fried crisps, extruded products, dry roasted nuts and general dry food products having a water content of less than 5 percent by weight, calculated on the total weight of said general dry food product, said general dry food product being made of materials selected from the group consisting of cereals, preferably wheat and corn, potato and rice.
4. The method of claim 3, wherein the oven baked food product is selected from the group consisting of biscuits, cookies, pretzels, crackers, and snacks.
5. The method of claim 3 or claim 4, wherein oven baked food product is pretzels.
6. The method according to claim 3, wherein the extruded products are deep fried after extrusion.
7. The method according to any one of the preceding claims, wherein the oil or fat is selected from the group consisting of edible and vegetable oils.
8. The method according to any one of the preceding claims, wherein the binder is selected from the group consisting of maltodextrins, dextrins, edible polymers, arabic gum, guar gum and cellulose derivatives.
9. The method according to claim 8, wherein the binder is a maltodextrins having a dextrin equivalent in the range of 0.1 to 10.
10. The method according to claim 8, wherein the edible polymers are selected from the group consisting of proteins, starches and polysaccharides.
11. The method according to any one of the preceding claims, wherein the liquid mixture comprising a seasoning and an oil or fat comprises 5.0 to 60.0 percent by

weight of seasoning and 40.0 to 95.0 percent by weight of the oil or fat, based on the total weight of the mixture.

12. The method according to any one of the preceding claims, wherein the liquid mixture comprising a binder and water comprises 5.0 to 60.0 percent by weight of binder and 40.0 to 95.0 percent by weight of water, based on the total weight of the mixture.

13. The method according to any one of the preceding claims, wherein in step (c) the food product is dried to a moisture content of not more than about 7 %.

14. A coated food product obtainable by the method according to any one of claims 1 - 13.

Abstract

The present invention relates to a method for preparing a coated food product comprising: (a) coating the food product in a first step with a layer of a liquid mixture comprising a seasoning and an oil or fat; (b) coating the coated food product obtained in step (a) in a second step with a layer of a liquid mixture comprising a binder and water, and (c) drying the coated food product obtained in step (b). The food product is preferably selected from the group consisting of deep fried crisps, extruded products, dry roasted nuts, food products having a water content of less than 5 percent by weight, biscuits, cookies, pretzels, crackers, and snacks.